

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number
WO 2005/064127 A1

(51) International Patent Classification⁷: **F01N 1/00, 7/02**

(21) International Application Number:
PCT/SE2004/001898

(22) International Filing Date:
16 December 2004 (16.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0303613-4 31 December 2003 (31.12.2003) SE

(71) Applicant (for all designated States except US): **ABB AB**
[SE/SE]; Kopparbergsvägen 2, S-721 83 Västerås (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JOHANSSON, Claes-Göran** [SE/SE]; Mårdvägen 22, S-722 42 Västerås (SE). **ÅBOM, Mats** [SE/SE]; Rågången 86, S-175 46 Järfälla (SE).

(74) Agent: **ABB AB**; Legal & Compliance/Intellectual Property, Forskargränd 8, S-721 78 Västerås (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

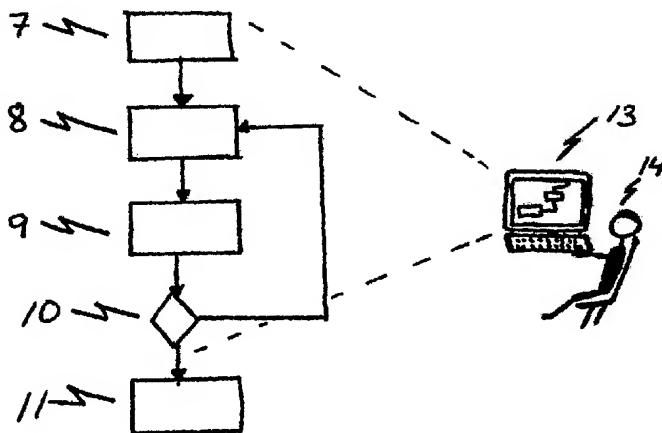
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD FOR REDUCING NOISE OF A HIGH POWER COMBUSTION ENGINE



(57) Abstract: A sound reduction system for reducing noise from a high power combustion engine is supplied by means of a method. The sound reduction system comprises a plurality of elements and attenuating devices placed in an elongated channel. During design of the sound reduction system one makes use of a particular suitable attenuating element with a first reactive part, a second reactive part and a third reactive part. Such a module, which is less sensitive to position in the channel, cost effective to manufacture and cost effective to model, is combined with single attenuating devices. The method enables a user to meet the requirements on sound reduction and keeping construction costs down, by using an iterative step-by-step approach. Such an approach is unknown according to traditional methods. An advantage of the method is that it enables an accurate acoustic model of the complete exhaust system, not only in the low frequency area and in the upper frequency area, but also in the intermediate frequency area. The method provides efficient modeling of an exhaust system and enables that a desired noise level close to the outlet of the exhaust system is met.

WO 2005/064127 A1